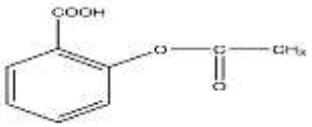
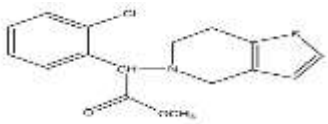
Differences Between Aspirin & Clopidogrel

	Aspirin (OTC, Rx)	clopidogrel (Rx)
Chemical structure		
Brand Names	Aspirin ,Noor aspirin, yanzhou,..	Plavix
Scientific name	Acetylsalicylic acid	clopidogrel
Classes	Antiplatelet Agents, Cardiovascular ; Antiplatelet Agents Hematologic; NSAIDs	Antiplatelet Agents, Cardiovascular ; Antiplatelet Agents, Hematologic
Dosage Forms & Strengths	tablet 81mg, 325mg,500mg	tablet, 75mg, 300mg
Uses	Pain and Fever, Acute Coronary Syndrome, Primary ASCVD Prevention with Low-Dose Aspirin, Ischemic Stroke & Transient Ischemic Attack , Anti-Inflammatory, Colorectal Cancer (Off-label)	Acute Coronary Syndrome, Recent MI, Stroke, or Established Peripheral Arterial Disease, Coronary Artery Disease, Cardioembolic Strok, Carotid Artery Stenting (Off-label)
Commen Adverse Effects	Angioedema ,Bronchospasm, CNS alteration,Dermatologic problems, GI pain, ulceration, bleeding, Hepatotoxicity	Upper respiratory tract infection (8.7%), Chest pain (8.3%),Headache (7.6%), Flulike syndrome (7.5%), Arthralgia (6%), Pain (6%), Dizziness
Contraindications	Hypersensitivity to aspirin or NSAIDs, aspirin-intolerant asthma (HLA DPB1*0301),Allergy to tartrazine dye	Hypersensitivity, Active pathologic bleeding (eg, peptic ulcer, intracranial hemorrhage)
Mechanism of Action	Inhibits synthesis of prostaglandin by cyclooxygenase; inhibits platelet aggregation; has antipyretic and analgesic activity	Inhibitor of adenosine diphosphate (ADP)-induced pathway for platelet aggregation
Bioavailability	80-100%	>50%
Onset	PO, 5-30 min; PR, 1-2 hr	2 hr
Duration:	PO, 4-6 hr; PR, >7 hr	0.75 hr
plasma concentration	Analgesia/antipyresis, 30-100 mcg/mL; anti-inflammatory, 150-300 mcg/mL	3 mg/L
Protein bound	≤100 mcg/mL, 90-95%; 100-400 mcg/mL, 70-85%; higher concentrations, 25-60%	98%
Metabolism	by liver via microsomal enzyme system	in liver by hepatic CYP450 enzymes (in vitro by CYP3A4, CYP2C19
Active metabolites	Salicylic acid	5-thiol-clopidogril
Half-life	Low dose, 2-3 hr; higher dose, 15-30 hr	6 hr (parent drug); 30 min
Excretion	Urine (80-100%), sweat, saliva, feces	Urine (50%), feces (46%)
others	Its prodrug, has one ring, less duration, gives with omeprazole , can used alone or combined with others drugs.	Its prodrug, has three rings, more duration, not gives with omeprazole , can used alone or combined with others drugs.

References: Medscape and katzing basic and clinical pharmacology chapter 34

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